

Claims

1. A steel composition, characterized in that it comprises the following components in % by weight:

C: 0.12-0.45
Si: 0.10-1.00
Mn: 0.50-1.95
S: 0.005-0.060
Al: 0.004-0.050
Ti: 0.004-0.050
Cr: 0-0.60
Ni: 0-0.60
Co: 0-0.60
W: 0-0.60
B: 0-0.01
Mo: 0-0.60
Cu: 0-0.60
Nb: 0-0.050
V: 0.10-0.40
N: 0.015-0.040

Remainder: Fe and unavoidable impurities

with the proviso that:

- 1) $\text{wt\% V} \times \text{wt\% N} = 0.0021 \text{ to } 0.0120$
- 2) $1.6x \text{ wt\% S} + 1.5x \text{ wt\% Al} + 2.4x \text{ wt\% Nb} + 1.2x \text{ wt\% Ti} = 0.035 \text{ to } 0.140$
- 3) $1.2x \text{ wt\% Mn} + 1.4x \text{ wt\% Cr} + 1.0x \text{ wt\% Ni} + 1.1x \text{ wt\% Cu} + 1.8x \text{ wt\% Mo} = 1.00 \text{ to } 3.50$

2. A die-formed part made of steel, characterized in that the steel has a composition according to claim 1.

3. A method of producing a die-formed part according to claim 2, comprising the steps of:
 - (a) heating the ingoing material made of a steel composition according to claim 1 to a temperature of 1,000 to 1,300°C;
 - (b) forming the ingoing material of step (a) by forging;
 - (c) cooling the die-formed part obtained in step (b) to room temperature, wherein the cooling rate in the temperature range to 580°C is at least 0.2°C/s.
4. A method according to claim 3, characterized in that the cooling in step (c) occurs at a cooling rate of 0.2°C/s to 0.6°C/s until a temperature of 580°C.
5. A method according to claim 3, characterized in that the cooling in step (c) occurs at a cooling rate of 0.7°C/s to 6°C/s until a temperature of 580°C.
6. The use of the die-formed part obtainable by the method according to one of claims 3 to 5 as a chassis part for commercial vehicles.
7. The use of the die-formed part obtainable by the method according to claim 5 as a chassis part for passenger cars.